

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number  
**WO 2004/022579 A2**

- (51) International Patent Classification<sup>7</sup>: **C07K**
- (21) International Application Number:  
PCT/US2003/028157
- (22) International Filing Date:  
8 September 2003 (08.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/319,530 6 September 2002 (06.09.2002) US
- (71) Applicant (*for all designated States except US*): **UNIVERSITY OF SOUTH FLORIDA** [US/US]; 4202 East Fowler Avenue, FAO 126, Tampa, FL 33620-7900 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **SANCHEZ-RAMOS, Juan** [US/US]; 10435 Canary Isle Drive, Tampa, FL 33647 (US). **SONG, Shijie** [US/US]; 18125 Sweet Jasmine Drive, Tampa, FL 33647 (US). **SANBERG, Paul, R.** [US/US]; 11751 Pilot Country Drive, Spring Hill, FL 34610 (US). **KAMATH, Siddharth, G.** [US/US]; 10226 Meadow Crossing Drive, Tampa, FL 33647-3229 (US).
- (74) Agents: **LADWIG, Glenn, P.** et al.; Saliwanchik, Lloyd & Saliwanchik, Suite A-1, 2421 NW 41st Street, Gainesville, FL 32606 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: CELLULAR DELIVERY OF NATRIURETIC PEPTIDES

(57) Abstract: The present invention pertains to a method for treating deficits, such as neurological deficits, caused by focal or generalized edema associated with injury to the central nervous system, heart, liver, and kidney. The present invention further concerns a method for producing natriuretic peptides and pharmaceutical compositions comprising bone marrow stromal cells and effective amounts of retinoic acid and nerve growth factor to induce the bone marrow stromal cells to increase production of natriuretic peptides.

WO 2004/022579 A2